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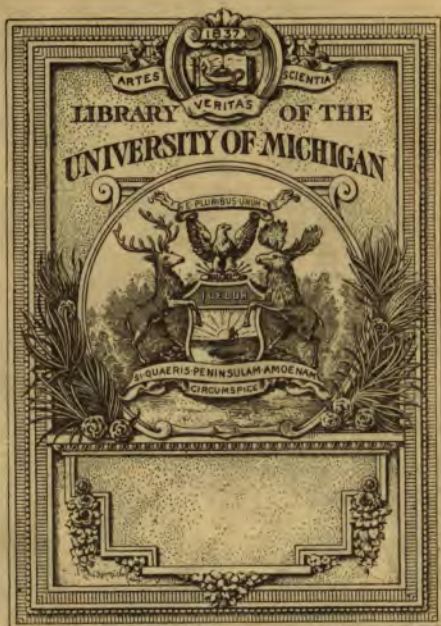
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ADDRESS
OF
THE MOST NOBLE
THE MARQUIS OF NORTHAMPTON,
&c. &c. &c.,
THE PRESIDENT,
READ AT
THE ANNIVERSARY MEETING
OF
THE ROYAL SOCIETY,
ON
Saturday, November 30, 1839.

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1839.

ROYAL SOCIETY.

ADDRESS

OF

THE MOST NOBLE THE PRESIDENT,

READ AT

The Anniversary Meeting, November 30, 1839.

GENTLEMEN,

A YEAR having now elapsed since you conferred upon me the highly honourable office of your President, it becomes my duty, in accordance with the example of my predecessors, to address you. The first and most agreeable part of my task is to express my feelings of gratitude to those Gentlemen whom you were pleased to select as my Council. I am most highly indebted to them for the zealous co-operation and hearty assistance which I have ever received at their hands. It is to them that I have looked to aid my inexperience, and to supply my manifold deficiencies, and I have not been disappointed. To those who are the more permanent officers of the Society, the Treasurer and the Secretaries, my obligations are particularly great, and I will venture to add, that to them, as well as to the other members of the Council, your thanks are due as well as mine.

The past year has indeed been to that portion of the Royal Society which takes an active part in its affairs, one of more than usual labour and exertion,—of labour and exertion, destined, as I hope, to produce rich and ample fruit. The great and marking peculiarity which has attended it, has been the sailing of the Antarctic Expe-

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dition. The importance of following up in the southern regions of the globe the magnetic inquiries so interesting to men of science in Europe, was strongly felt by one of our distinguished Fellows, Major Sabine, and by him brought before the notice of the British Association at their meeting at Newcastle, as he had also previously done at Dublin. That great assemblage of men of science, concurring in the views of Major Sabine, resolved to suggest to Her Majesty's Government the propriety of sending out a scientific expedition; and the Royal Society lost no time in warmly and zealously seconding the recommendation. It would, Gentlemen, be an idle inquiry to ask whether the success of the application be owing to the British Association or to the Royal Society. It would seem, indeed, probable, that, considering the financial difficulties of the time, the Government might have hardly considered itself justified in yielding to the prayers of either body separately on this occasion; and if to the British Association be the glory of the first proposal of this Expedition, to the Royal Society belongs the praise of perseverance in seconding the recommendation, and of laborious and earnest endeavours to aid in rendering it in every respect as efficient as possible. It is my duty as your President to return my thanks and yours to Lord Melbourne, Lord Minto, Lord Monteaule, Sir Hussey Vivian, and Sir Richard Jenkins, the Chairman of the Board of East India Directors, for the urbanity and kindness with which they have received and acted on the suggestion of your Council, and for the confidence which the Government reposed in us, when they asked for our assistance in instructing the officers to whom the Expedition has been intrusted.

In compliance with the request conveyed to us by the First Lord of the Admiralty, the Council transmitted to the Government a body of hints and instructions in different branches of science, which I trust are likely to be of material use both to the principal and to the subsidiary objects of the Antarctic Expedition.

These hints and instructions would have been far less extensive and efficient if the Council had not been able to have recourse to the several Scientific Committees, of whose formation the Society is already aware. The Expedition has now sailed, amply provided with the best scientific instruments and furnished with ample scientific instructions: it is commanded by one well acquainted both

with magnetic inquiry and nautical research. We may therefore hope that, with the blessing of Providence, it will return with a store of knowledge valuable to the geographer, to the geologist, to the meteorologist, and to him also who studies the marvels of vegetable and animal life. In addition to all this we may hope, that the main object of the Expedition will be accomplished by additional light thrown on the obscure problems which still attend the magnetism of the earth, and that by such discoveries Captain James Clark Ross may not only add to his own reputation and his country's glory, but also give to the adventurous mariner increased facility and security in traversing the pathways of the ocean.

The Antarctic Expedition was not the only measure recommended by the Royal Society and the British Association to Her Majesty's Government. Another important recommendation, which had previously been brought forward by Baron Humboldt, was the establishment of fixed magnetic observatories for the purpose of making simultaneous observations in different parts of our colonial possessions. These recommendations have been readily acceded to, both by the Government and by the Directors of the East India Company, and probably, ere many months shall have elapsed, the observatories will be in full activity. This ready acquiescence in the wishes of men of science appears to me highly creditable to our statesmen; and I feel confident, that while science belongs to no party, on the other hand, every party in this country is fully aware of the importance of science, and of the numerous benefits conferred by it on the human race.

I have stated, Gentlemen, that your Council had recourse to the Scientific Committees for assistance in drawing up instructions for the Expedition in different branches of knowledge; those committees, who were named only two years ago, were at first apparently more a matter of form than substance; they have now been found capable of doing excellent service. Not only has your Council consulted them on the questions already alluded to, but also, observing that the several Committees are composed of the most competent judges of the merits of the memoirs in the respective departments of science communicated to the Society, they have, in general, referred the papers to them to report upon, previously to coming to a decision regarding their publication.

The Royal Society, from its character of pursuing every branch of physical science, is evidently in a different position from other societies professing some one science alone. It may be reasonably expected, that in the Botanical or Geological Society, for instance, the whole Council should possess a certain degree of botanical or geological knowledge. This, however, cannot be the case with us. Our Council will comprise a few astronomers, a few zoologists, a few botanists, and a few persons well acquainted with geology and medicine ; but no single science can monopolize a large number of its members. In difficult questions we have therefore felt that it is more satisfactory to ourselves, and we think probably more so to the general body of the society, and to those who have favoured us with papers, that we should ask the opinion of a larger number of men conversant with the immediate sciences in question. At the same time, the Council retains its responsibility for its acts, and the chief officers of the society are officially members of each of the scientific committees.

The Council have derived a further assistance from these Committees in the adjudication of our medals. In naming these Committees, the Council has had both a difficult and a delicate task. Convinced that bodies, when too numerous, are little adapted for business, they have also felt that the power of giving their attendance might be more important than absolute superiority of scientific attainments. Some members have, however, been selected, though really non-resident, because it was believed that their colleagues might wish to consult them by letter. With these objects and views, the Council have done their best ; but they have little doubt that some gentlemen have been overlooked and omitted, whose presence in the Committees might have been very desirable. The Society must consider this as in some degree a new system, to be perfected and improved by experience alone.

Another question has occupied a share of the time of the Council during the last year. We have felt that the testimonial of recommendation for new Fellows has scarcely been sufficiently definite and precise in stating the grounds on which the candidate was recommended to the body of the Society. We have therefore thought it desirable to draw up forms of testimonial, some one of which may be adopted as most fit for each individual so recom-

mended. We have thought this more fair, at the same time, to the meritorious candidate and to those electors who are otherwise left in the dark with respect to his claims for their suffrages. We hope and trust that this new regulation will not stand in the way of any candidate who would be a desirable addition to our number.

The labours of our tried and valuable officer, Mr. Robertson, having materially increased, partly in consequence of the establishment of Scientific Committees, and partly from other causes, and those labours having also become more valuable from the lengthened experience of many years spent in our service, it has appeared to us an act of mere justice to augment his salary from £160 to £200 per annum.

The Society are doubtless aware, that, at the time of the last Anniversary, no final settlement had taken place of the pecuniary claim of Mr. Panizzi, who had commenced the Catalogue of our Library, though that gentleman had received a considerable sum on account. Feeling that it was very desirable to bring this question to a termination, we agreed to a reference; and Mr. Drinkwater Bethune having been proposed by Mr. Panizzi, and agreed to by us, that gentleman has decided that a balance of £328 is still due by us.

The vacancies in the list of our Foreign Members have been supplied by the election of M. Savart of Paris, Signor Melloni of Parma, M. Quetelet of Brussels, M. Hansteen of Christiana, Prof. Agassiz of Neufchatel, and M. von Martius of Munich, as those Fellows who were present at their election will remember.

I have to announce to you, Gentlemen, with great regret, the retirement of Captain Smyth from the office of Foreign Secretary, in consequence of his leaving his present residence for one at an inconvenient distance from London.

I shall not detain you by any observations of the finances of the Royal Society, as you will shortly hear the report of the Treasurer on that subject.

I have the honour, Gentlemen, to inform you that the Council have, by an unanimous decision, awarded the Royal Medals to Dr. Martin Barry and Mr. Ivory, and the Copley Medal for the year to Mr. Robert Brown; and I shall now beg leave to address myself to those three Gentlemen.

Dr. Barry—it gives me sincere pleasure to bestow this medal on a gentleman who has so well deserved it, by researches in a difficult and important portion of animal physiology*. Your merits have been appreciated by men much more capable of understanding the subject than I can pretend to be—by men selected by the Council of the Royal Society for their physiological science, who have felt the great value of the discoveries you have made by accurate and diligent research, aided by the skilful use of the microscope. I trust that the award of this medal will encourage you to persevere in the same course, and that future discoveries may add to your reputation and to that of the important profession to which you belong.

Mr. Ivory—it is not the first time that you have been addressed from this chair, and it gives me great satisfaction to follow the steps of my predecessors, Sir Joseph Banks and Sir H. Davy, by again bestowing a medal on one who is an honour to the Royal Society

* These researches are the subject of Dr. Martin Barry's papers "On Embryology," communicated to the Royal Society in 1838 and 1839.

In these memoirs the author has brought to light many new and interesting facts, and has repeated and confirmed previous observations regarding the nature, formation, and developement of the ovum in the vertebrata, and especially in the mammalia.

The importance of the subject and the difficulty of its investigation, render the establishment of facts previously known extremely acceptable to physiologists. But the novel matter contained in Dr. Barry's Memoirs forms a considerable proportion of them. Without entering into unnecessary detail, we may mention that the author has determined the order of formation of the different parts of the ovum, and the nature and mode of developement of the vesicle (ovisac), in which these processes take place. He has, in like manner, discovered the nature and traced the developement of the so-called disc of M. Baer, and has detected in it the mechanism which mainly regulates the transit of the ovum into the Fallopian tube. The second series of Dr. Barry's observations makes known the changes which the ovum undergoes in its passage through the Fallopian tube; the earliest and most interesting stages of developement being for the first time described in this memoir.

The value of his very laborious and extensive series of minute observations is greatly enhanced by the clearness and method with which the results are given, and by the comparisons, which the author's intimate acquaintance with this branch of physiological literature has enabled him to institute, between his own observations and those of his predecessors in the same branch of inquiry.

and pre-eminently distinguished for his mathematical attainments. The labours of your life are too well known to the scientific world to require any eulogium from me, and I consider that in this tribute to your paper on astronomical refraction, we are rather doing an honour to ourselves than to you.

Mr. Brown—in conferring the Copley Medal on you for your valuable discoveries in vegetable impregnation*, I am quite sure that the voice of scientific Europe will respond to the decision of the Council of the Royal Society. The Académie des Sciences has already pronounced on your merits, as also on those of Mr. Ivory, by electing you as well as that gentleman to a seat among their foreign members; and the University of Oxford has also, by an honorary degree, given you a similar testimonial. That you are one of our fellows is to myself a circumstance peculiarly agreeable, as it must be to the whole body over whom I have the honour to preside. Your discoveries in the particular botanical question, for which I have to give you the Copley Medal, are so important, not only in a botanical, but also in a general scientific point of view, by showing the close analogies of animal and vegetable life, that the Committee of Zoology have felt it as much their province as that of the Committee of Botany, to recommend that the Copley Medal should be bestowed upon you; and the Council have come to an unanimous resolution to give it, though at the same time other gentlemen were recommended by other scientific committees, with whom even an unsuccessful rivalry would be no mean praise.

I hope, Mr. Brown, that you may long enjoy life and leisure to pursue researches so valuable to science and so honourable to the country of which you are a native.

In drawing up the following notice of the losses which the Royal Society has sustained during the last year, in conformity with the practice of my predecessors, I have availed myself of the assistance

* The following are the discoveries referred to: viz., the organization of the vegetable ovule, immediately before fecundation, (published in 1826); and the direct action of the pollen, manifested by the contact established between it and that point of the ovulum where the embryo subsequently first becomes visible, and published in papers, in the years 1832 and 1833, and communicated to the Linnean Society.

of one of the Fellows, whose acquaintance with the labours of men of science peculiarly qualified him for the execution of a task which I could not myself have ventured to undertake. I therefore will not longer occupy your time by any further remarks of my own, but will conclude by the expression of my present wishes for the prosperity of the Royal Society, and for its success in furthering the noble ends for which it was instituted.

The Rev. Martin Davy was originally a member of the medical profession, which he followed, during a great part of his life, with no inconsiderable reputation. He became a medical student of Caius College in 1787, and was elected to a fellowship in 1793 and to the mastership in 1803, the late illustrious Dr. Wollaston being one of his competitors. One of the first acts of his administration was to open his College to a more large and liberal competition, by the abolition of some mischievous and unstatutable restrictions, which had been sanctioned by long custom, and also by making academical merit and honours the sole avenue to college preferment: and he lived to witness the complete success of this wise and liberal measure, in the rapid increase of the number of high academical honours which were gained by members of his College, and by the subsequent advancement of many of them to the highest professional rank and eminence.

Some years after his accession to the mastership, he took holy orders and commuted the degree of Doctor in Medicine for that of Theology, and in later life he was collated to some considerable ecclesiastical preferments. Dr. Davy had no great acquaintance with the details of accurate science, but he was remarkable for the extent and variety of his attainments in classical and general literature; his conversation was eminently lively and original, and not less agreeable from its occasional tendency to somewhat paradoxical, though generally harmless speculations. He died in May last, after a long illness, deeply lamented by a large circle of friends, to whom he was endeared by his many social and other virtues.

Dr. Herbert Marsh, Bishop of Peterborough, and one of the most acute and learned theologians of his age, became a member of St. John's College in the University of Cambridge in the year 1775 and

took his B.A. degree in 1779, being second in the list of Wranglers, which was headed by his friend and relation Mr. Thomas Jones, a man whose intellectual powers were of the highest order, and who for many years filled the office of tutor of Trinity College with unequalled success and reputation. Soon after his election to a fellowship, he went to Germany, where he devoted himself during many years to theological and general studies, and first became known to the public as the translator and learned commentator of Michaelis's Introduction to the New Testament. It was during his residence abroad that he published in the German language various tracts in defence of the policy of his own country in the continental wars, and more particularly a very elaborate "History of the Politics of Great Britain and France, from the time of the Conference at Pilnitz to the Declaration of War," a work which produced a marked impression on the state of public opinion in Germany, and for which he received a very considerable pension on the recommendation of Mr. Pitt. In 1807, he was elected Lady Margaret's Professor of Divinity in the University of Cambridge, an appointment of great value and importance, which he retained for the remainder of his life. On the resumption of his residence in the University, he devoted himself with great diligence to the preparation of his lectures on various important branches of Divinity, interposing a great number of occasional publications on the Catholic Question, the Bible Society, and various other subjects of political and theological controversy. In 1816 he was appointed Bishop of Llandaff; and three years afterwards he was translated to the see of Peterborough. In the course of a few years from this time, his health, which had been already undermined by his sedentary habits and severe studies, began rapidly to decline, and he was compelled to abstain from the active duties of his professorship and from the exciting labours of controversy; and though his infirmities continued to increase both in number and severity, yet his life was prolonged to a mature old age by the vigilant and anxious care and nursing of one of the most exemplary and affectionate of wives.

Dr. Marsh was a man of great learning and very uncommon vigour of mind, and as a writer, remarkable for the great precision of his language and his singular clearness in the statement of his argument. His lectures on Divinity are a most valuable contribution to the theological student, and his "Comparative View of the Churches of

England and Rome" presents one of the most masterly views of the great principles which distinguish those churches, which has ever appeared from the pen of a Protestant writer. His controversial writings, though generally full of acuteness and ability, must be expected to share the fate of all productions which are not kept from perishing by the permanent existence of the interests, of whatever nature, which gave rise to them: and we may justly lament that learning and powers of reasoning of so extraordinary a character, were not more exclusively and steadily devoted to the completion of more durable and systematic theological labours.

The father of the late Professor Rigaud had the care of the King's Observatory at Kew, an appointment which probably influenced the early tastes and predilections of his son. He was admitted a member of Exeter College, Oxford, in 1791, at the early age of sixteen, and continued to reside there as fellow and tutor until 1810, when he was appointed Savilian Professor of Geometry. He afterwards succeeded to the care of the Radcliffe Observatory, and the noble suite of instruments by Bird, with which it is furnished, was augmented, on his recommendation, by a new transit and circle, so as to fit it for the most refined purposes of modern practical astronomy: and we venture to express a hope that it will shortly become equally efficient and useful with the similar establishment which exists in the sister university.

Professor Rigaud published, in 1831, the miscellaneous works and correspondence of Bradley, to which he afterwards added a very interesting supplement on the astronomical papers of Harriott. In 1838, he published some curious notices of the first publication of the Principia of Newton; and he had also projected a life of Halley, with a view of rescuing the memory of that great man from much of the obloquy to which it has been exposed; he had made extensive collections for a new edition of the mathematical collections of Pappus; and he was the author of many valuable communications to the Transactions of the Royal Astronomical Society, and to other scientific journals, on various subjects connected with physical and astronomical science. There was probably no other person of his age who was equally learned on all subjects connected with the history and literature of astronomy.

Professor Rigaud was a man of most amiable character, and of

singularly pleasing manners and person. The warmth of his affections, his modesty, gentleness, and love of truth, as well as the great variety of his acquirements and accomplishments, had secured him the love and the respect of a large circle of friends, not merely in his own university, but amongst men of science generally. He died in London in March last, after a short but painful illness, which he bore with a fortitude and resignation which might have been expected from his gentle, patient, and truly Christian character.

Mr. Wilkins, Professor of Architecture to the Royal Academy, became a member of Caius College, Cambridge, in 1796, and took the degree of B.A. in 1800, his name standing sixth on the mathematical Tripos. He was soon afterwards nominated one of Wort's Travelling Bachelors, and also a fellow of his college, and passed four years in Greece and Italy, studying the architectural remains and monuments of those countries with great diligence, preparatory to the practice of his profession as an architect, which his father had followed with credit, and for which his great skill as a draftsman particularly qualified him. The study of those matchless creations of ancient art would appear to have exercised a powerful influence on his taste, and to have led him to prefer the purer forms of Grecian architecture to the more varied imitations and adaptations of them which appeared in the works of the Romans or in those of the great masters of modern Italy and more particularly of Palladio;—and the influence of these predilections was sufficiently visible in his designs for the East India College at Haileybury, and for Downing College, Cambridge, and is more or less easily traceable in most of his subsequent works. In 1807, he published his "*Antiquities of Magna Græcia*," a magnificent work, containing descriptions, views, measurements, and restorations of the chief remains of Syracuse, Agrigentum, Ægesta, and Pæstum. At a subsequent period he published "*Atheniensia*," or Remarks on the Buildings of Athens, in which he expressed opinions unfavourable to those commonly entertained respecting the rank which the Elgin marbles, which had been only recently purchased by the nation, should be considered to hold when viewed as works of art: he was likewise the author of a translation of the Civil Architecture of Vitruvius, including those books which relate to the public and private edifices of the Ancients,

which was preceded by a learned introduction on the history of the Rise and Progress of Grecian Architecture,—a work which was chiefly designed to show that the precepts of Vitruvius referred to Grecian and not to Roman buildings.

The publication of these works and of some essays in the *Archæologia*, which showed a profound knowledge of the principles both of Grecian and Gothic architecture, led to very extensive professional engagements, particularly in the University of Cambridge, where he rebuilt Corpus Christi and King's colleges, and made extensive additions to Trinity College: he was likewise the author of the magnificent portico of London University College, the National Gallery, and of other important edifices in London. He was latterly compelled by the declining state of his health and by repeated attacks of the gout, to retire from his professional engagements, though he did not abandon those studies which had formed his delight and occupation from his earliest years. In 1837, he published his "*Prolusiones Architectonicæ, or Essays on subjects connected with Grecian and Roman Architecture,*" which were designed, in some degree, as a substitute for those lectures, which, under other circumstances, he would have been called upon to deliver, as Professor of Architecture, to the students of the Royal Academy. During the last year of his life, though constantly confined to his bed, and extremely weakened and emaciated by disease, he still continued his favourite pursuits until within a few days of his death, which took place on the last day of August last.

The Rev. Archibald Alison, senior Minister of St. Paul's Chapel, Edinburgh, was born in 1757, became a member of the University of Glasgow in 1772, and of Baliol College, Oxford, in 1775, and took the degree of B.C.L. in 1784: he soon afterwards took holy orders in the English Church, and was presented to several ecclesiastical preferments by Sir William Pulteney, Lord Chancellor Loughborough, and Bishop Douglas of Salisbury. In 1784 he married the daughter of the celebrated Dr. John Gregory of Edinburgh, with whom he lived in uninterrupted happiness for forty years of his life. His celebrated Essay "*on the Nature and Principles of Taste*" was first published in 1790, and speedily became incorporated into the standard literature of Great Britain. Towards the close of the

last century, he became a permanent resident in his native city as minister of the Episcopal chapel, Cowgate, and afterwards of St. Paul's, where he was connected by congenial tastes and pursuits with Dugald Stewart, Playfair, Dr. Henry Mackenzie, Dr. Gregory, and the many other distinguished men who, during so many years, made that beautiful and picturesque city the metropolis of British literature. In 1814, he published two volumes of sermons; and at a later period, a very interesting memoir of his accomplished friend the Hon. Fraser Tytler Lord Woodhouslee. Mr. Alison was a man of very pleasing and refined manners, of great cheerfulness and equanimity of temper, of a clear and temperate judgment, and possessing a very extensive knowledge of mankind. He was habitually pious and humble-minded, exhibiting, in the whole tenor of his life, the blessed influence of that Gospel of which he was the ordained minister. All his writings are characterized by that pure and correct taste, the principles of which he had illustrated with so much elegance and beauty.

Edmund Law Lushington was born in 1766, at the lodge of St. Peter's College, Cambridge, of which his grandfather, Bishop Law, was master. He became a student, and afterwards a fellow of Queen's College in that University, and attained the fourth place on the mathematical tripos in 1787. After practising for some years at the bar, he was appointed Chief Justice of Ceylon, a station which he filled for several years with great advantage to that colony. On his return from the East, he was made Auditor of the Exchequer, and also received from his uncle Lord Ellenborough the appointment of Master of the Crown Office. He was an intimate friend of Wollaston and Tennant; and though withdrawn by his pursuits from the active cultivation of science, he continued throughout his life to feel a deep interest in its progress. His acquaintance with classical and general literature was unusually extensive and varied, and he had the happiness of witnessing in his sons the successful cultivation of those studies which other and more absorbing duties had compelled him to abandon. Mr. Lushington was a man of a cheerful temper, of very courteous and pleasing manners, temperate and tolerant in all his opinions, and exemplary in the discharge both of his public and private duties:

few persons have ever been more sincerely beloved either by their friends or by the members of their families.

Mr. George Saunders was formerly architect to the British Museum, where he built the Townley Gallery: he was also a diligent and learned antiquary, and the author of a very interesting and valuable paper in the twenty-sixth volume of the *Archæologia*, containing the results of an inquiry concerning the condition and extent of the city of Westminster at various periods of our history.

The only foreign members whom the Royal Society has lost during the last year are the Baron de Prony, one of the most distinguished engineers and mathematicians of the age; and the venerable Pierre Prevost, formerly Professor of Natural Philosophy in the University of Geneva.

Gaspard Clair Francois Marie Riche de Prony, was born in the department of the Rhone in 1755, and became a pupil, at an early age, of the *Ecole des Ponts et Chaussées*, where he pursued his mathematical and other studies with great application, and with more than common success. He was subsequently employed, as an adjunct of M. Perronet, the chief of that school, in many important works, and particularly in the restoration of the Port of Dunkirk; and in 1786, he drew up the engineering plan for the erection of the Pont Louis XVI., and was employed in superintending its execution. M. de Prony had already appeared before the public, first as the translator of General Roy's "Account of the Methods employed for the Measurement of the Base on Hounslow Heath," which was the basis of the most considerable geodesical operation which had at that time been undertaken; and subsequently, as the author of an essay of considerable merit, "On the Construction of Indeterminate Equations of the Second Degree." In 1790 and 1797, appeared his great work, in two large volumes, entitled *Nouvelle Architecture Hydraulique*, which is a very complete and systematic treatise on Mechanics, Hydrostatics and Hydraulics, and more particularly on the principles of the steam-engine and hydraulical engineering. In 1792 he was appointed to superintend the execution of the Cadastre, or great territorial and numerical survey of France,

—a gigantic undertaking, the subsequent execution of which, during the revolutionary government, combined with the establishment of the bases of the decimal metrical system, gave employment and developement to so many and such important scientific labours and discoveries : among many other laborious duties, the formation of the extensive tables devolved upon M. de Prony, who, in the course of two years, organized and instructed a numerous body of calculators, and completed the immense *Tables du Cadastre*, which are still preserved in MSS. at the library of the Observatory in seventeen enormous folio volumes.

M. de Prony became Directeur-Général des Ponts et Chaussées in 1794, and was nominated the first Professor of Mechanics to the Ecole Polytechnique ;—an appointment, which led to the publication of many very important memoirs on mechanical and hydraulical subjects, and on various problems of engineering, which appeared in the Journal of that celebrated school. He declined the invitation of Napoleon to become a member of the Institute of Egypt,—a refusal which was never entirely forgotten or pardoned. In the beginning of the present century he was engaged in the execution of very extensive works connected with the embankments towards the embouchure of the Po, and in the ports of Genoa, Ancona, Pola, Venice, and the Gulf of Spezzia ; and in 1810, he was appointed, in conjunction with the celebrated Count Fossombroni of Florence, the head of the *Commissione de l'Agro Romano*, for the more effectual drainage and improvement of the Pontine Marshes. The result of his labours in this very important task, which he prosecuted with extraordinary zeal and success, was embodied in his *Déscription Hydrographique et Historique des Marais Pontins*, which appeared in 1822, which contains a very detailed description of the past, present and prospective condition of these pestilential regions, and a very elaborate scientific discussion of the general principles which should guide us, in this and all similar cases, in effecting their permanent restoration to healthiness and fertility.

After the return of the Bourbons, M. de Prony continued to be employed in various important works, and more particularly in the formation of some extensive embankments towards the mouth of the Rhone. In 1817, he was made a member of the *Bureau des Longitudes*, and in the following year he was elected one of the fifty fo-

reign members of the Royal Society : in 1828, he was created a Baron by Charles X., and was made a peer of France in 1835. He died in great tranquillity at Aonnières near Paris, in July last, in the 84th year of his age.

The Baron de Prony was a man of singularly pleasing manners, of very lively conversation, and of great evenness of temper. He was one of the most voluminous writers of his age, generally upon mathematical and other subjects connected with his professional pursuits ; and though we should not be justified in placing him on the same level with some of the great men with whom he was associated for so many years of his life, yet he is one of those of whom his country may justly be proud, whether we consider the extent and character of his scientific attainments, or the great variety of important practical and useful labours in which his life was spent.

Pierre Prevost was born in 1751, and was originally destined to follow the profession of his father, who was one of the pastors of Geneva : at the age of twenty, however, he abandoned the study of theology for that of law, the steady pursuit of which, in time, gave way to his ardent passion for literature and philosophy : at the age of twenty-two, he became private tutor in a Dutch family, and afterwards accepted a similar situation in the family of M. Delessert, first at Lyons, and afterwards at Paris. It was in this latter city that he commenced the publication of his translation of Euripides, beginning with the tragedy of Orestes ;—a work which made him advantageously known to some of the leading men in that great metropolis of literature, and led to his appointment, in 1780, to the professorship of philosophy in the college of Nobles, and also to a place in the Academy of Berlin, on the invitation of Frederick the Great. Being thus established in a position where the cultivation of literature and philosophy became as much a professional duty as the natural accomplishment of his own wishes and tastes, he commenced a life of more than ordinary literary activity and productiveness. In the course of the four years which he passed at Berlin, he published *Observations sur les méthodes employées pour enseigner la morale ; sur la théorie des gains fortuits ; sur le mouvement progressif du centre de gravité de tout le système solaire ; sur l'origine des vitesses projectiles ; sur l'économie des anciens gouverne-*

ments ; sur l'état des finances d'Angleterre ; and he also completed the three first volumes of his translation of Euripides. There were, in fact, few departments of literature or philosophy which were not comprehended in the extensive range of his studies and publications.

In the year 1784, he returned to Geneva to attend the death-bed of his father, when he was induced to accept the chair of belles lettres in the University,—an appointment, which he found on trial little suited to his taste, and which he shortly afterwards resigned. For some years after this period, he was compelled more by circumstances than by inclination to partake largely in those political discussions, which, for some years, agitated his native city, and which afterwards, resumed upon a wider theatre, shook to its centre the whole framework of European society; but he gradually withdrew himself from political life on his appointment to the chair of natural philosophy in 1792, and devoted himself from thenceforth, with renewed activity and ardour, to pursuits which were most congenial to his tastes.

In 1790 M. Prevost published his *Mémoire sur l'équilibre du feu*, and in the following year his *Recherches sur la chaleur*: these important memoirs were followed by many others on the same subject in various scientific journals; and the general results of all his researches and discoveries were exhibited, in a systematic form, in his well-known work *Sur le calorique rayonnant*, which was published in 1809, and in which he fully developed his *Theory of Exchanges*, and was enabled to give a consistent explanation of the principal facts which were at that time known respecting the nature and propagation of heat.

It would be impossible, in the very short compass within which this notice is necessarily confined, to enumerate even a small part of the publications of an author whose pursuits were so various and whose labours were so unremitting. He contributed papers to our Transactions in 1797 and 1803; the first containing an explanation of some optical experiments of Lord Brougham, and the second, some remarks on heat and on the action of bodies which intercept it, with reference to a paper by Dr. Herschel; and in 1806, he became one of the foreign members of our body. In 1799, he obtained the first accessit for an essay *Sur l'influence des signes rela-*

tivement à la formation des idées, which was written for a prize, adjudged to the celebrated Degerando, proposed by the Institute of France; and he was shortly afterwards elected a corresponding member of that body. His *Essais de philosophie, et études de l'esprit humain*, appeared in 1804, to which were appended some very remarkable Essays of his friend and ancient preceptor Le Sage, of whom he published a most interesting life in the following year. He likewise published, in very rapid succession, translations of the Rhetoric of Blair, the Essays and posthumous works of Adam Smith, the Elements of Philosophy of Dugald Stewart, the essay on Population by Malthus, Salt's Travels in Abyssinia, the Conversations on Political Economy, of his wife's sister-in-law, Mrs. Marcet, and many other works of less importance and interest.

In 1823, at the age of 72, though still vigorous and active both in body and mind, he resigned the professorship of natural philosophy, in wise anticipation of the approach of that period of life when men naturally feel reluctant to acknowledge the decline of their faculties, or incompetent to perceive it. From this time, though still consulted by his colleagues and fellow-citizens on every important subject connected with the Academy or the state, he retired into the bosom of his family, which contained within itself, in a very uncommon degree, every element of tranquillity, contentment and happiness. His own temper was singularly equable and tranquil; and his tastes and pursuits, which rarely left his time unoccupied, saved him from that *tedium vite* which sometimes renders old age querulous and discontented. Thus happily disposed and happily circumstanced, it is not wonderful that his life should have been prolonged beyond the ordinary limits of humanity. He died on the 8th of April, in the 88th year of his age, surrounded by his family, and deeply regretted by all who knew him.

The philosophical character of M. Prevost had been greatly influenced by that of his master Le Sage, a man of great originality and profundity of thought, but whose speculations, particularly those which attempted the explanation of the cause of gravity, trespassed somewhat beyond the proper limits of philosophy. We consequently find him disposed to explain the laws of the propagation of heat and light on the most simple mechanical principles, and to trace their origin and progress much farther than the experiments or facts will

properly warrant ; thus giving to his conclusions, in many cases, a much more hypothetical character than would otherwise have attached to them. M. Prevost had little acquaintance with the more refined resources of modern analysis ; and his researches on many important branches of experimental and philosophical inquiry were consequently limited to reasonings which could be carried on by the most simple algebraical, or geometrical processes. But notwithstanding the restrictions which were thus imposed on his progress, the range of his philosophical researches was unusually extensive and various, and his discoveries on heat must always be considered as constituting a most important epoch in a branch of science which has recently received so extraordinary a developement in the hands of Fourier, Forbes, Melloni, and other philosophers.

